

# Gross National Product by Industry, 1987-89

THIS article presents revised current- and constant-dollar estimates of gross product originating (GPO) by industry for 1987 and 1988 and new estimates for 1989.<sup>1</sup> These estimates update and extend the improved GPO estimates for 1977-88 that were published in the January 1991 *SURVEY OF CURRENT BUSINESS* (see "Gross Product by Industry, 1977-88: A Progress Report on Improving the Estimates"). The estimates for 1987-89, which are shown in tables 3 and 4 on page 27, incorporate the revisions in the national income and product accounts (NIPA's) that appeared in the July 1990 *SURVEY* and newly available source data for gross output and input prices.<sup>2</sup>

The first section of this article discusses the changes in constant-dollar GPO for 1989 and the impact of the revisions on the changes in constant-dollar GPO for 1987 and 1988. The second section provides a summary of the impact of the revisions on the levels of current- and constant-dollar GPO.

The publication of the GPO estimates in this article and in the January *SURVEY* completes the first phase of BEA's work to improve the industry series. As indicated in the box on page 7, revised and updated estimates of GPO by industry will be released in 1992. In 1992, estimates for 1977-89 and earlier years will be revised to reflect the results of the upcoming comprehensive NIPA revision and new estimates will be made for 1990 and 1991.

1. GPO by industry is the contribution of each industry—including government and the rest of the world—to GNP. An industry's GPO, often referred to as its "value added," is equal to its gross output (sales or receipts and other operating income, plus inventory change) minus its intermediate inputs (consumption of goods and services purchased from other industries or imported).

2. Tables 3 and 4 are the same as NIPA tables 6.1 and 6.2, which are part of the full set of NIPA tables that usually appear in the July *SURVEY*.

Table 1.—Annual Rates of Change of Gross National Product by Industry in Constant Dollars for 1987-89  
(Percent)

	1987			1988			1989
	Previously published	Revised	Revision	Previously published	Revised	Revision	
Gross national product .....	3.7	3.4	-.3	4.4	4.5	.1	2.5
Domestic industries (gross domestic product) .....	3.8	3.5	-.3	4.4	4.4	0	2.5
Private industries .....	3.9	3.6	-.3	4.5	4.4	-.1	2.5
Agriculture, forestry, and fisheries .....	.8	1.4	.6	-9.5	-2.2	1.8	3.4
Mining .....	-2.1	-5	-2.9	1.4	1.6	.2	-3.8
Construction .....	.5	1.7	1.2	.9	.2	-.7	.4
Manufacturing .....	5.5	6.1	.6	9.2	7.7	-1.5	1.3
Durable goods .....	7.2	6.8	-.4	12.7	10.7	-2.0	2.3
Nondurable goods .....	3.7	5.0	1.3	3.5	3.9	.4	-4
Transportation and public utilities .....	2.8	3.4	.6	4.9	6.5	1.6	1.7
Transportation .....	6.8	7.6	.8	1.8	2.3	.5	1.8
Communications .....	12.0	10.4	-1.6	3.1	5.6	2.5	1.5
Electric, gas, and sanitary services .....	8.8	6.7	-2.1	10.4	12.2	1.8	1.9
Wholesale trade .....	1.7	-.1	-.1.8	2.6	2.2	-.4	4.9
Retail trade .....	-2.0	-1.6	.4	7.3	7.4	.1	3.3
Finance, insurance, and real estate .....	5.4	4.7	-.7	3.4	5.2	1.8	2.4
Services .....	4.5	4.7	.2	3.4	5.1	1.7	4.7
Government and government enterprises .....	1.7	1.5	-.2	1.8	1.9	.1	1.7
Statistical discrepancy <sup>1</sup> .....							
Residual <sup>2</sup> .....							
Rest of the world .....	-11.5	-17.9	-6.4	5.5	11.9	6.4	4.7

1. The statistical discrepancy in current dollars equals GNP measured at the sum of expenditures less changes against GNP—that is, GNP measured as the sum of costs incurred and profits earned in production. The statistical discrepancy in constant dollars equals the statistical discrepancy in current dollars divided by the implicit price deflator for gross domestic business product.

2. The residual equals GNP in constant dollars measured as the sum of expenditures less the statistical discrepancy in constant dollars and less GNP in constant dollars measured at the sum of gross product originating by industry.

## Changes in industry GPO

As published in the July 1990 *SURVEY*, constant-dollar GNP increased 2.5 percent in 1989, considerably less than the 4.5-percent increase in 1988. The new estimates of constant-dollar GPO by industry show that this slowdown was widespread among industry groups (table 1). The 1989 growth rates slowed for all industry groups

except the agriculture, forestry, and fisheries group, wholesale trade, and construction. For mining, the growth rate turned negative in 1989.

## Data Availability

Estimates of gross national product by industry for 1977-89 are now available on diskette, computer tape, and printout. When ordering, please specify the accession number:

Media Type	BEA Accession No.	Price
Diskette	BEA NIW 81-406	\$20.00
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NOTE.—The GPO by industry estimates were prepared under the supervision of Michael F. Mohr, Chief of the GNP by Industry Branch of the National Income and Wealth Division. Preparation of the estimates involved the following staff: Norman Bakka, Felicia Candela, Donna Cinal, Vesta Jones, Sherlene Lum, and Robert Sylvester. Marilyn Baker, Vanessa Clark, and Angela Williams provided statistical and secretarial services.

In manufacturing, the growth rate slowed to 1.3 percent in 1989 from 7.7 in 1988. Slower growth was recorded in 9 of the 11 durable goods industries and in 6 of the 10 nondurable goods industries. The slowdown was particularly pronounced in nonelectrical machinery, fabricated metal products, and motor vehicles.

Among the other industries in which GPO growth slowed, the downswing in mining in 1989 was attributable to oil and gas extraction, in which GPO has fallen since 1985, and to nonmetallic minerals mining. In the transportation and public utilities group, growth in transportation, in communication, and in electric, gas, and sanitary services all slowed. The slowdown in transportation was concentrated in railroad transportation and in pipelines except natural gas; the slowdown in communication stemmed from slowdowns in both the telephone and telegraph and the radio and television broadcasting industries. In the finance, insurance, and real estate group, all industries except banking contributed to the slowdown; in particular, sharp slowdowns were recorded in real estate, in security and commodity brokers, and in insurance carriers. In services, a slowdown in growth—from 5.2 percent to 4.7 percent—was widespread.

Two industry groups had noticeably higher GPO growth in 1989 than in 1988. Agriculture, forestry, and fisheries increased 3.6 percent after declining 7.7 percent; the rebound was in farms, where GPO had fallen sharply

in 1988. Wholesale trade increased 4.9 percent after increasing 2.2 percent.

As published last July, the increase in real GNP was revised down from 3.7 percent to 3.4 percent for 1987 and was revised up from 4.4 percent to 4.5 percent for 1988. For 1987, the revised estimates of constant-dollar GPO by industry show sizable downward revisions in the growth rates for communication, for electric, gas, and sanitary services, and for rest of the world. For 1988, there were sizable upward revisions for communication and for rest of the world and a sizable downward revision for durable goods manufacturing.

#### Sources of revisions

The revisions to the 1987 and 1988 estimates of current- and constant-dollar GNP and GPO by industry primarily reflect the incorporation of the revisions to the NIPA's released in July 1990. The NIPA revisions affected the estimates of GNP, charges against GNP (the sum of costs incurred and profits earned), and the GPO of the five industries—farms, the nonfarm housing services part of the real estate industry, private households, general government, and rest of the world—for which estimates were released in July. The NIPA revisions also affected the estimates of current-dollar GPO by industry that are based on the industry distributions of the components of charges against GNP.

As published last July, current-dollar GNP was revised down \$8.7

billion for 1987 and \$6.9 billion for 1988 (table 2). Current-dollar charges against GNP—that is, GNP less the statistical discrepancy—was revised down \$2.8 billion for 1987 and up \$11.7 billion for 1988. For 1987, the largest downward revisions were in wholesale trade and in finance, insurance, and real estate; the largest upward revision was in durable goods manufacturing. For 1988, large upward revisions in services and in retail trade more than offset large downward revisions in wholesale trade and in durable and nondurable goods manufacturing.

Last July's constant-dollar revisions in charges against GNP largely reflected the current-dollar revisions: Constant-dollar charges against GNP was revised down \$3.4 billion for 1987 and up \$8.1 billion for 1988. With several exceptions, constant-dollar revisions in GPO by industry for 1987 and 1988 also reflected the current-dollar revisions. Current-dollar GPO in both mining and nondurable goods manufacturing was revised down for 1987 and 1988, while their constant-dollar GPO was revised up for both years. Current-dollar GPO in finance, insurance, and real estate was revised down for 1988, while constant-dollar GPO was revised up. The differences in the current- and constant-dollar revisions reflect the use of the extrapolation procedure for estimating constant-dollar GPO for these industries (see the technical note in "Gross Product by Industry, 1977-88" in the January 1991 Survey).

Table 2.—Revisions in Gross National Product by Industry for 1987 and 1988

(Billions)

	Current dollars						1982 dollars					
	1987			1988			1987			1988		
	Previously published	Revised	Revision	Previously published	Revised	Revision	Previously published	Revised	Revision	Previously published	Revised	Revision
Gross national product	4,524.3	4,515.4	-8.7	4,880.4	4,873.7	-6.9	3,653.7	3,645.3	-8.4	4,026.4	4,016.9	-9.5
Domestic industries (gross domestic product)	4,493.8	4,484.7	-9.1	4,847.3	4,840.2	-7.1	3,627.2	3,618.8	-8.2	3,996.3	3,986.5	-9.7
Private industries	3,963.6	3,954.4	-9.2	4,286.3	4,279.9	-6.6	3,443.8	3,435.7	-8.1	3,689.4	3,679.4	-10.0
Agriculture, forestry, and fisheries	38.3	39.7	1.4	39.8	38.3	-1.5	104.4	105.1	.7	94.5	97.0	2.5
Mining	77.0	76.8	-.2	80.4	80.0	-.4	135.8	137.5	1.7	127.3	129.5	2.2
Construction	216.9	219.2	2.3	232.6	237.4	4.8	178.4	177.8	-.6	176.9	177.9	1.0
Manufacturing	872.1	875.5	3.4	948.6	948.7	.1	849.7	852.1	2.5	927.5	915.4	-12.1
Durable goods	495.4	499.0	3.6	530.3	527.2	-3.2	517.4	515.6	-1.8	583.2	570.8	-12.4
Nondurable goods	376.6	376.5	-.1	418.3	421.5	3.2	332.2	336.6	4.4	344.3	344.7	.4
Transportation and public utilities	415.9	413.9	-2.0	441.4	441.3	-.1	375.6	371.3	-4.3	392.8	395.4	2.6
Communication	151.6	151.5	-.1	161.4	165.4	4.0	147.4	149.8	2.4	158.0	153.6	-4.4
Electric, gas, and sanitary services	125.5	122.8	-2.7	129.3	129.1	-.2	104.4	101.1	-3.3	107.4	107.8	.4
Wholesale trade	308.9	294.8	-14.1	314.1	317.4	3.3	289.4	284.3	-5.1	296.4	296.4	0.0
Retail trade	423.9	426.4	2.5	494.7	493.9	-.8	378.0	371.6	-6.4	397.1	399.2	2.1
Finance, insurance, and real estate	764.9	761.6	-3.3	838.3	836.4	-1.9	664.7	660.6	-4.1	583.7	590.4	6.7
Services	792.7	793.4	.7	872.5	885.2	12.7	593.4	592.6	-.8	613.9	623.3	9.4
Government and government enterprises	528.9	528.8	-.1	570.4	572.6	2.2	494.8	496.6	1.8	422.5	423.8	1.3
Statistical discrepancy <sup>1</sup>	-4.7	-10.6	-5.9	-9.5	-28.2	-18.6	-4.1	-9.1	-5.0	-4.0	-23.6	-19.6
Residual <sup>2</sup>							-37.4	-29.2	7.2	-27.7	-31.7	-4.0
Rest of the world	30.9	29.8	-1.1	33.3	33.5	.2	26.5	25.3	-1.2	28.1	28.3	.2

1. See footnote 1 of table 1.

2. See footnote 2 of table 1.

Table 3.—Gross National Product by Industry  
(Billions of dollars)

	Line	1986	1987	1988	1989
Gross national product	1	6,231.6	6,585.6	6,875.7	6,386.8
Domestic industries (gross domestic product)	2	6,197.2	6,486.7	6,806.2	6,163.2
Private industries	3	3,698.5	3,962.4	4,286.9	4,051.0
Agriculture, forestry, and fisheries	4	93.6	108.7	104.2	113.5
Farms	5	75.3	88.2	88.1	88.5
Agricultural services, forestry, and fisheries	6	17.8	21.9	23.6	24.9
Mining	7	74.3	76.8	80.8	80.3
Metal mining	8	1.6	2.4	2.9	3.6
Coal mining	9	13.2	13.2	15.2	13.6
Oil and gas extraction	10	52.4	54.0	58.8	55.7
Nonmetallic minerals, except fuels	11	6.9	7.2	6.1	7.4
Construction	12	303.8	319.2	327.4	347.7
Manufacturing	13	312.4	375.5	390.7	366.0
Durable goods	14	478.1	499.9	527.1	541.0
Lumber and wood products	15	24.7	29.4	31.1	32.2
Furniture and fixtures	16	14.2	15.3	15.2	16.0
Stone, clay, and glass products	17	26.9	25.7	25.7	28.3
Primary metal industries	18	39.2	36.1	43.2	44.4
Fabricated metal products	19	37.9	48.4	55.5	60.0
Machinery, except electrical	20	82.7	88.9	96.2	97.3
Electric and electronic equipment	21	82.7	89.6	90.5	96.9
Motor vehicles and equipment	22	53.2	52.5	50.3	50.1
Other transportation equipment	23	15.0	29.9	39.7	42.2
Instruments and related products	24	27.1	26.8	30.3	30.5
Food and kindred products	25	14.3	15.7	16.7	17.1
Textile mill products	26	354.3	375.7	413.5	425.0
Apparel and other textile products	27	70.9	75.1	80.9	81.5
Leather and leather products	28	14.4	14.1	14.4	16.1
Chemical and allied products	29	19.1	20.1	20.2	20.3
Plastics and rubber products	30	21.9	23.5	23.6	24.6
Printing and publishing	31	35.5	40.2	43.7	46.4
Chemical and allied products	32	56.9	61.1	62.5	68.2
Food and kindred products	33	70.8	80.9	95.8	98.8
Textile mill products	34	85.2	89.6	94.5	93.7
Leather and leather products	35	26.8	28.9	26.6	31.1
Chemical and allied products	36	3.8	3.3	3.3	3.3
Transportation and public utilities	37	384.9	413.9	444.3	468.9
Transportation	38	143.0	153.9	169.4	171.5
Railroad transportation	39	29.5	29.9	31.3	31.5
Local and interurban passenger transit	40	7.9	8.3	8.5	8.5
Trucking and warehousing	41	62.5	66.0	70.9	72.9
Water transportation	42	4.1	7.9	8.3	8.5
Transportation by air	43	29.2	34.7	38.3	40.9
Pipelines, except natural gas	44	3.0	3.8	4.3	4.1
Transportation services	45	11.8	12.3	13.7	15.0
Communications	46	115.8	122.8	129.1	133.7
Telephone and telegraph	47	104.4	109.6	114.1	117.3
Radio and television broadcasting	48	11.4	13.1	15.0	16.4
Electric, gas, and sanitary services	49	136.1	137.2	149.7	155.6
Wholesale trade	50	282.8	294.8	317.4	330.8
Retail trade	51	488.5	456.4	459.9	485.4
Finance, insurance, and real estate	52	694.3	761.6	826.8	896.7
Banking	53	80.3	88.7	108.2	119.4
Credit agencies other than banks	54	15.7	18.0	15.7	20.5
Security and commodity brokers, and services	55	30.1	35.8	42.3	43.4
Insurance carriers	56	49.5	55.4	62.0	60.4
Insurance agents and brokers, and services	57	25.6	30.6	34.6	37.4
Real estate	58	478.6	517.3	561.6	607.1
Holding and other investment companies	59	16.4	15.9	10.2	8.1
Services	60	717.6	793.6	888.2	970.9
Hotels and other lodging places	61	32.4	36.0	41.2	44.5
Personal services	62	31.9	34.0	38.5	39.0
Business services	63	163.6	180.1	202.1	222.9
Auto repair, services, and garages	64	36.3	38.1	40.5	45.6
Miscellaneous repair services	65	13.7	13.8	13.6	16.9
Motion pictures	66	10.5	12.5	13.5	14.7
Amusement and recreation services	67	22.1	24.8	27.4	29.3
Health services	68	200.3	226.1	250.3	275.3
Legal services	69	54.1	60.0	68.7	75.2
Educational services	70	27.6	29.5	32.5	35.3
Social services and membership organizations	71	41.7	45.8	51.2	56.0
Miscellaneous professional services	72	74.4	83.6	93.9	103.9
Private households	73	9.1	9.1	9.7	10.3
Government and government enterprises	74	583.5	634.6	672.6	619.3
Federal	75	173.5	181.9	192.1	208.2
State and local	76	143.5	156.8	159.2	168.8
Government enterprises	77	25.9	31.0	32.7	39.7
State and local	78	130.1	139.2	140.5	141.1
Government enterprises	79	300.3	321.1	345.8	379.0
Government enterprises	80	29.8	31.9	34.7	38.1
Statistical discrepancy <sup>1</sup>	81	-1.8	-10.6	-28.2	-17.0
Rest of the world	82	34.9	29.0	33.6	37.6

1. See footnote 3 of table 1.

Table 4.—Gross National Product by Industry in Constant Dollars  
(Billions of 1982 dollars)

	Line	1986	1987	1988	1989
Gross national product	1	3,717.9	3,845.3	4,036.9	4,137.7
Domestic industries (gross domestic product)	2	3,687.4	3,820.0	3,988.4	4,087.6
Private industries	3	2,315.8	2,442.7	2,620.4	2,780.9
Agriculture, forestry, and fisheries	4	103.6	105.1	97.9	100.5
Farms	5	84.1	83.8	75.3	74.8
Agricultural services, forestry, and fisheries	6	19.3	21.3	21.7	21.6
Mining	7	128.2	127.5	129.1	127.2
Metal mining	8	2.4	2.7	2.4	3.3
Coal mining	9	17.0	18.9	19.6	21.6
Oil and gas extraction	10	102.1	100.2	99.9	95.7
Nonmetallic minerals, except fuels	11	6.6	6.6	7.4	6.6
Construction	12	174.6	177.5	177.9	179.0
Manufacturing	13	621.4	652.2	671.9	629.8
Durable goods	14	481.9	515.6	570.6	583.7
Lumber and wood products	15	21.3	23.0	26.4	25.6
Furniture and fixtures	16	12.0	12.8	12.2	12.2
Stone, clay, and glass products	17	22.9	22.0	22.8	23.6
Primary metal industries	18	32.2	34.8	37.8	36.9
Fabricated metal products	19	34.8	38.9	46.2	53.8
Machinery, except electrical	20	125.5	134.1	163.9	174.9
Electric and electronic equipment	21	74.1	82.9	88.1	90.8
Motor vehicles and equipment	22	46.5	44.8	40.6	47.3
Other transportation equipment	23	49.8	55.7	59.4	65.8
Instruments and related products	24	25.7	25.7	27.9	28.6
Food and kindred products	25	14.0	14.9	16.4	16.2
Textile mill products	26	320.5	336.6	348.7	345.4
Apparel and other textile products	27	65.6	66.7	67.8	70.3
Leather and leather products	28	7.0	5.2	5.7	3.1
Chemical and allied products	29	17.0	17.4	16.7	16.7
Plastics and rubber products	30	21.8	22.0	22.4	22.4
Printing and publishing	31	31.6	33.7	34.6	33.0
Chemical and allied products	32	43.1	46.7	46.3	42.1
Food and kindred products	33	44.6	71.9	76.1	76.1
Textile mill products	34	41.1	42.6	44.5	44.9
Leather and leather products	35	26.7	29.5	29.9	30.8
Chemical and allied products	36	2.7	3.0	3.0	2.9
Transportation and public utilities	37	381.4	392.3	395.4	402.3
Transportation	38	149.2	153.6	156.3	156.3
Railroad transportation	39	23.1	23.8	27.3	29.0
Local and interurban passenger transit	40	6.3	6.1	4.7	6.3
Trucking and warehousing	41	63.1	65.8	67.4	68.5
Water transportation	42	3.6	3.7	3.8	4.0
Transportation by air	43	28.4	33.0	32.4	31.7
Pipelines, except natural gas	44	3.2	4.4	5.4	5.5
Transportation services	45	10.4	10.9	11.5	12.2
Communications	46	92.5	102.1	107.8	109.4
Telephone and telegraph	47	85.0	93.2	97.8	98.8
Radio and television broadcasting	48	7.5	8.9	10.1	10.6
Electric, gas, and sanitary services	49	111.9	119.4	134.0	136.6
Wholesale trade	50	284.2	284.3	290.4	304.7
Retail trade	51	377.5	371.6	399.3	412.4
Finance, insurance, and real estate	52	536.8	568.6	599.0	684.4
Banking	53	62.5	62.8	62.4	63.1
Credit agencies other than banks	54	7.8	8.3	8.4	8.3
Security and commodity brokers, and services	55	23.1	28.8	34.4	37.9
Insurance carriers	56	36.0	34.4	37.0	36.7
Insurance agents and brokers, and services	57	17.8	20.0	21.4	22.1
Real estate	58	378.6	394.5	413.0	424.4
Holding and other investment companies	59	9.3	10.9	11.4	11.5
Services	60	568.6	592.4	613.3	682.3
Hotels and other lodging places	61	26.4	28.2	31.2	32.5
Personal services	62	25.9	26.3	26.6	30.3
Business services	63	129.8	139.7	147.7	158.7
Auto repair, services, and garages	64	29.0	28.4	28.3	28.8
Miscellaneous repair services	65	11.2	10.8	11.7	12.2
Motion pictures	66	8.6	8.9	9.5	9.8
Amusement and recreation services	67	18.4	20.1	21.8	22.8
Health services	68	150.3	161.1	161.4	164.4
Legal services	69	36.7	36.9	40.6	41.8
Educational services	70	22.4	22.7	22.3	24.1
Social services and membership organizations	71	34.7	36.5	39.0	40.9
Miscellaneous professional services	72	63.3	67.4	71.3	78.4
Private households	73	8.3	8.7	9.2	9.5
Government and government enterprises	74	407.9	415.4	423.6	438.5
Federal	75	147.1	149.2	151.7	152.5
State and local	76	122.6	124.3	126.1	126.5
Government enterprises	77	34.4	34.9	35.8	36.0
State and local	78	260.2	266.4	271.8	278.0
Government enterprises	79	240.3	246.1	251.1	257.0
Government enterprises	80	30.0	30.2	30.6	31.0
Statistical discrepancy <sup>1</sup>	81	-1.5	-9.1	-23.6	-13.8
Residual <sup>2</sup>	82	-34.7	-39.2	-31.7	-40.0
Rest of the world	83	36.5	25.3	28.3	38.2

1. See footnote 1 of table 1.

2. See footnote 2 of table 1.